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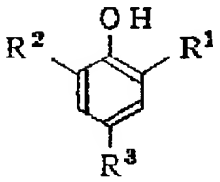
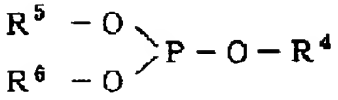
TITLE : NONAQUEOUS ELECTROLYTE AND SECONDARY BATTERY USING IT



I



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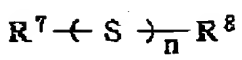

III

ABSTRACT : PROBLEM TO BE SOLVED: To prevent a thermal runaway at abnormal time such as overcharge and a short circuit by containing one or more kinds of phenol type, phosphite type and sulfide type antioxidants with the specific concentration in an electrolytic solution by dissolving electrolyte in a solvent having a specific dielectric constant or an electrolytic solvent by mixing a solvent having specific viscosity with this.

SOLUTION: In order to improve a high dielectric constant solvent having a specific dielectric constant not less than 50 and electric conductivity, electrolyte such as lithium salt is dissolved in an electrolytic solvent by mixing a low viscosity solvent having viscosity not less than 1 centipoise at 25°C with this. One or more kinds of a phenol type antioxidant of a formula I, a phosphite type antioxidant of a formula II and a sulfide type antioxidant of a foamula III are contained by 0.01 to 10wt.% in this electrolytic solution, and react with an active organic radical generated by active oxygen released at abnormal time of a battery. In the formulas I, II, and III, R^1 is a hydrocarbon radical having the carbon number not less than 4, and R^2 and R^3 are hydrogen or an electron imparting group, and R^4 and R^7 are a hydrocarbon radical having the carbon number not less than 3, and R^5, R^6 and R^8 are a hydrocarbon radical, and (n) is 1 or 2.